

What is claimed is:

1. A radio communication method comprising the steps of:
notifying a receiving function showing that it is
possible to receive directional beams, from a first mobile
5 station which can receive directional beams to a first base
station which can receive directional beams;
changing a format of an individual channel which is to
be transmitted using directional beams by the first base
station;
10 notifying a downlink transmission method showing that
directional beams are to be transmitted in a downlink, from the
first base station to the first mobile station;
transmitting the individual channel using directional
beams, from the first base station to the first mobile station;
15 and
performing channel estimation using pilot symbols
inserted into the individual channel, in accordance with the
downlink transmission method.
- 20 2. A base station comprising:
an individual channel transmitter configured to transmit
an individual channel into which pilot symbols are inserted;
and
an individual channel format creator configured to create
25 a format of the individual channel,
and wherein the individual channel format creator changes
between a format of an individual channel which is to be
transmitted using directional beams and a format of an
individual channel which is to be transmitted using

non-directional beams.

3. The base station according to claim 2, further comprising:

5 a downlink transmission method notifier configured to notify a downlink transmission method showing that directional beams or non-directional beams are to be transmitted in a downlink.

10 4. The base station according to claim 2, wherein the individual channel format creator changes the format of the individual channel, in accordance with transmission rate of the individual channel.

15 5. The base station according to claim 2, wherein the individual channel format creator increases the number of pilot symbols which are to be inserted into one slot of the individual channel, when the individual channel is transmitted using directional beams.

20 6. The base station according to claim 2, wherein the individual channel format creator increases the power of the pilot symbols which are to be inserted into the individual channel, when the individual channel is transmitted using
25 directional beams.

7. The base station according to claim 2, wherein the individual channel format creator increases the power of the pilot symbols which are to be inserted into the individual

channel, when a mobile station performs a hand-over communication with a plurality of base stations, and when the number of base stations which transmit the individual channels using directional beams to the mobile station is more than a
5 predetermined number.

8. A mobile station comprising:

a channel estimator configured to perform channel estimation using pilot symbols;
10 a downlink transmission method receiver configured to receive a downlink transmission method showing that directional beams or non-directional beams are to be transmitted in a downlink;
a channel switcher configured to switch between channel
15 estimation using pilot symbols inserted into an individual channel and channel estimation using pilot symbols inserted into a common pilot channel, in accordance with the downlink transmission method.

20 9. The mobile station according to claim 8, further comprising:

a receiving function notifier configured to notify a receiving function showing whether it is possible to receive directional beams or not.